

New data on the jumping spiders (Aranei Salticidae) of Mongolia and Tuva.

Новые данные о пауках-скакунчиках (Aranei Salticidae) Монголии и Тувы.

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КЛЮЧЕВЫЕ СЛОВА: Salticidae (пауки-скакунчики), Монголия, Тува, новые виды и род.

ABSTRACT. Four new salticid species are described: *Aelurillus helvenacius* sp.n., *Dendryphantes darchan* sp.n. and *Yllenus marusiki* sp.n. from Mongolia, and *Tuvaphantes arat* sp.n. from Tuva. A new genus, *Tuvaphantes* gen.n., comprising 2 species, is established and defined.

РЕЗЮМЕ. Описаны четыре новых вида сальтицид: *Aelurillus helvenacius* sp.n., *Dendryphantes darchan* sp.n. и *Yllenus marusiki* sp.n. из Монголии и *Tuvaphantes arat* sp.n. из Тувы. Выделен и описан новый род, *Tuvaphantes* gen.nov., содержащий 2 вида.

Introduction

At present, the salticid spiders of Mongolia are still poorly known. There are only two papers on Mongolian spiders specially dedicated to Salticidae [Proszynski, 1982; Wesolowska, 1991]. Other taxonomic/faunistic data on this family are scattered in 10 papers [Simon, 1895; Loksa, 1965; Schenkel, 1953; Proszynski, 1968, 1979; Punda, 1975; Wesolowska, 1981; Logunov, 1991, 1992a, b]. In all, 40 salticid species have hitherto been registered from Mongolia, of which one, *Sitticus* sp., has not been exactly defined [s. Wesolowska, 1991], and another, *Heliophanus mongolicus* Schenkel, 1953, has been considered as a «nomen dubium» [Wesolowska, 1986]. Doubtless, this number does not exceed half of an estimated entire fauna of Salticidae of Mongolia.

The salticid fauna of Tuva has currently been known to comprise at least 50 species, of which only 45 have just been reviewed [Logunov & Marusik, 1991; Logunov, 1991, 1992b].

The present paper puts on record additional four new species from Mongolia and Tuva, also including

the description of a new genus, *Tuvaphantes* gen. nov. In one species, *Tuvaphantes insolitus* [Logunov, 1991], comb.n. ex *Dendryphantes*, the male has been found and described for the first time.

Material and methods

Specimens have been borrowed from or housed in the following museums: ZMMU, the Zoological Museum of the Moscow State University, Moscow, Russia (Dr. K.G. Mikhailov); IZW, the Institute of Zoology PAN, Warszawa, Poland (Prof. J. Proszynski).

The following abbreviations have been accepted in the text: AME - anterior medial eyes, d. - dorsally, v. - ventrally, pr. - prolaterally, rt. - retrolaterally, ap. - apically. The sequence of leg segments in measurement data is the following: femur + patella + tibia + metatarsus + tarsus. For leg spination the system adopted is that used by H.Ono [1988]. All measurements are in mm.

Descriptions

Aelurillus helvenacius sp.n.

Fig. 1 a,b.

MATERIAL. Holotype ♀ (ZMMU, Ta-4779), Mongolia, Ekhiyn-Gol Oasis, *Lasiogrostis splendens* tussock, 30.07.1983, leg. N.Ananieva.

DESCRIPTION. FEMALE. Measurements. Carapace 3.18 long, 2.33 wide, 1.43 high at PLE. Ocular area 1.33 long, 1.53 wide anteriorly and 1.55 wide posteriorly. Diameter of AME 0.40. Abdomen 3.88 long, 3.18 wide. Cheliceral length 1.00. Clypeal height 0.25. Length of leg segments: leg I - 1.50 + 0.90 + 0.85 + 0.70 + 0.63; leg II - 1.55 + 0.85 + 0.88

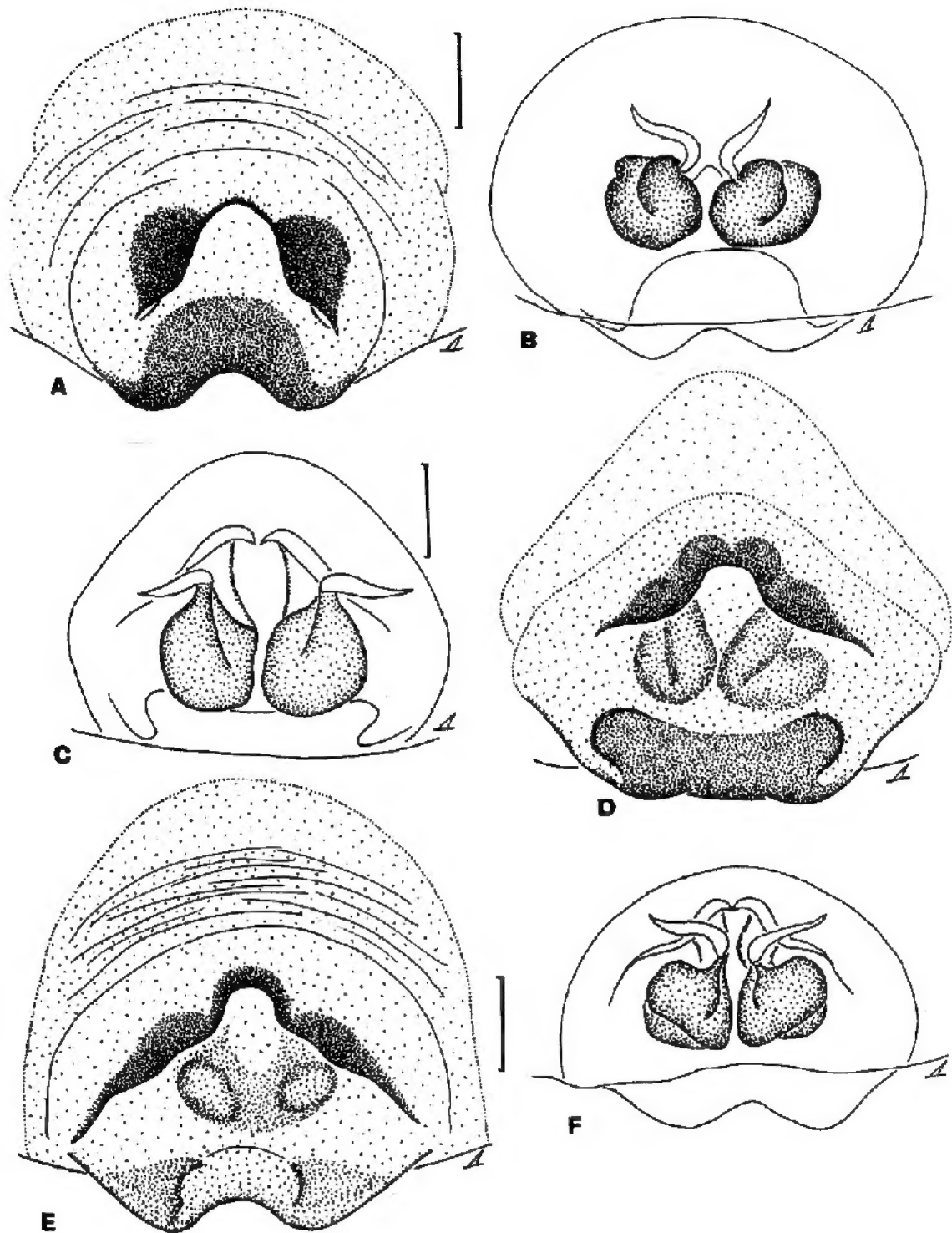


Fig. 1. Female genitalia of *Acutillus helvenacius* sp.n. (a,b); *A.v-insignitus* (Clerck, 1758) (c,d) and *A.affinis* (Lucas, 1846) (e,f): a,d,e - epigyne; b,c,f - vulva. Scales 0.1 mm.

Рис. 1. Гениталии самок *Acutillus helvenacius* sp.n. (a,b); *A.v-insignitus* (Clerck, 1758) (c,d) и *A.affinis* (Lucas, 1846) (e,f): a,d,e - эпигина; b,c,f - вульва. Масштаб 0.1 мм.

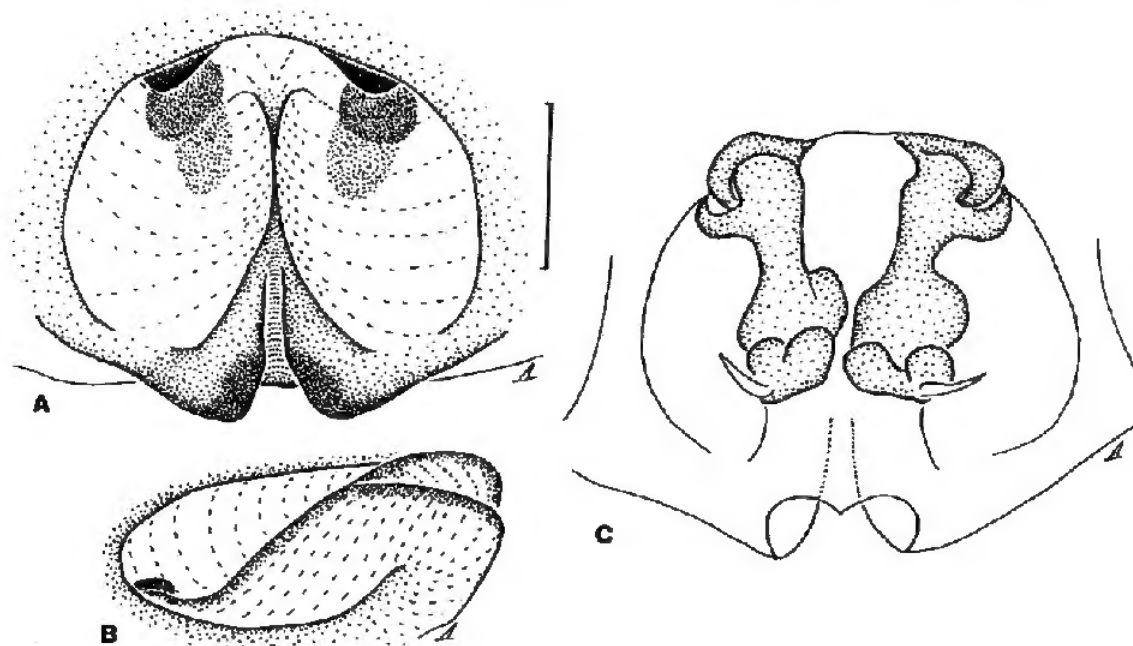


Fig. 2. *Dendryphantes darchan* sp.n.: a - epigyne, ventral view; b - ditto, lateral view; c - vulva. Scale 0.2 mm.

Рис. 2. *Dendryphantes darchan* sp.n.: а - эпигина, вид вентрально; б - то же, вид сбоку; в - вульва. Масштаб 0.2 мм.

+ 0.70 + 0.63; leg III - 2.20 + 1.13 + 1.15 + 1.40 + 0.78; leg IV - 2.18 + 0.95 + 1.40 + 1.63 + 0.78. Leg spination. Leg I: femur d.0-1-1-3; tibia pr.1-1, v.2-2ap.; metatarsus pr.1-1, v.2-2ap. Leg II: femur d.0-1-1-4; tibia pr.1-1, v.1-1-2ap.; metatarsus pr.1-1, v.2-2ap. Leg III: femur d.0-1-2-4; patella pr. and rt.0-1-0; tibia d.1-0, pr. and rt.1-1-1, v.1-2ap.; metatarsus d.1-0 or 1-1, pr. and rt.1-0-2ap., v.1-1-2ap. Leg IV: femur d.0-1-1-2; patella pr. and rt.0-1-0; tibia d.1-0, pr. and rt.1-1-1, v.1-1-2ap.; metatarsus pr., rt. and v.1-1-2ap. Coloration. Carapace brownish, densely covered by whitish and orange hairs. Eye field black, white hairs around anterior eyes. Clypeus brownish, densely covered by white hairs. Sternum brown. Maxillae, labium and chelicerae yellowish-brownish. Abdomen: dorsum grey-yellowish, without colour markings; sides and venter yellow. Book-lung covers grey-yellowish. Spinnerets yellow-brownish. All legs and palpi yellow with brownish rings. Epigyne and vulva as in Fig. 1 a,b.

DIAGNOSIS. The new species is very similar to *Aelurillus affinis* (Lucas, 1846) (Fig. 1e,f) and *A.v-insignitus* (Clerck, 1758) (Fig. 1c,d), but differs in the shape of the epigynal pocket and fold covering the copulatory openings [Fig. 1].

DISTRIBUTION. Type locality only.

ETYMOLOGY. The species name is derived from the Latin word «helvenacius», meaning «yellowish».

Dendryphantes darchan sp.n.

Fig. 2.

MATERIAL. Holotype ♀ (IZW), Mongolia, Darchan, 7.07.1963, collector unknown.

DESCRIPTION. FEMALE. Measurements. Carapace 2.38 long, 1.88 wide, 1.05 high at PLE. Ocular area 1.25 long, 1.40 wide anteriorly and 1.58 wide posteriorly. Diameter of AME 0.38. Abdomen 3.88 long, 2.55 wide. Cheliceral length 1.00. Clypeal height 0.10. Length of leg segments: leg I - 1.35 + 0.95 + 0.90 + 0.78 + 0.55; leg II - 1.20 + 0.70 + 0.67 + 0.65 + 0.48; leg III - 0.95 + 0.50 + 0.50 + 0.53 + 0.45; leg IV - 1.15 + 0.55 + 0.70 + 0.63 + 0.50. Leg spination. Leg I: femur d.0-1-1-3; tibia v.0-2-2-2; metatarsus v.2-2ap. Leg II: femur d.0-1-1-3; tibia v.0-1-2ap.; metatarsus v.2-2ap. Leg III and leg IV without spines. (NB. This specimen is damaged, lacking all legs on the right side). Coloration. Carapace reddish-brown, eye field darker, black around eyes. Clypeus narrow, covered by erect dark hairs. Sternum brownish. Maxillae, labium and chelicerae brown-reddish. Abdomen grey with colour markings usual for all *Dendryphantes*, i.e. two dorsal, wide, brown bands and two pairs of white patches. Legs brown-reddish with all femora darker than other segments.

Epigyne and vulva as in Fig. 2.

MALE unknown.

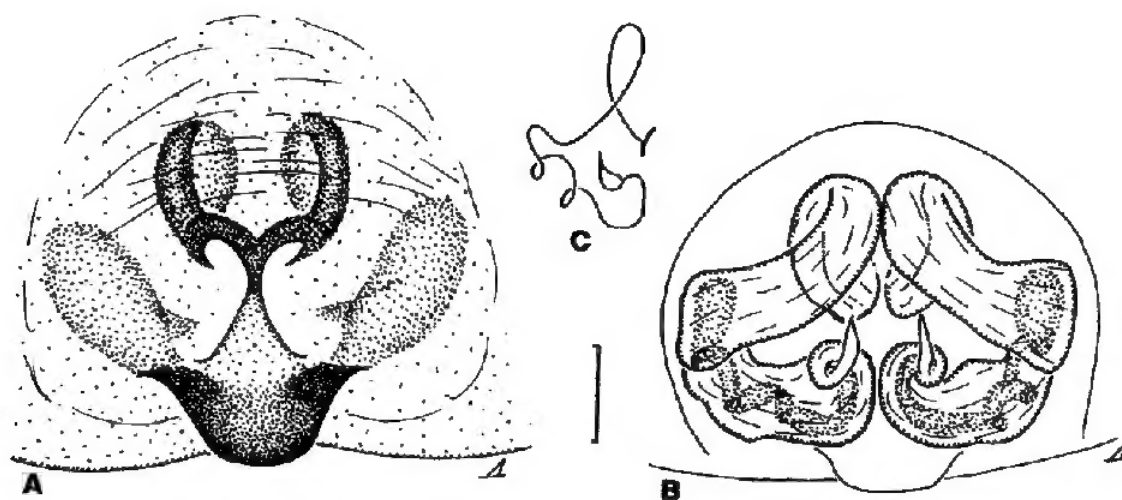


Fig. 3. *Yllenus marusiki* sp.n.: a - epigyne, ventral view; b - vulva. Scale 0.1 mm.

Рис. 3. *Yllenus marusiki* sp.n.: а - эпигина, вид вентрально; б - вульва. Масштаб 0.1 мм.

DIAGNOSIS. The new species is closely related to *Dendryphantes tuvinensis* Logunov, 1991 [see Logunov, 1991, Figs. 4, 5-6), but may be easily distinguished by the presence of a median septum in the epigynal depression (Fig. 2a,b) and the structure of the insemination ducts [Fig. 2c).

DISTRIBUTION. Type locality only.

ETYMOLOGY. The species is named after the type locality.

Yllenus marusiki sp.n.

Fig. 3.

MATERIAL. Holotype ♀ (IZW, 64/66), Mongolia, «Aimak Dornogov, 10 km NE od Sajnsand: W-riem pod Krackkami», 19.09.1966, leg. A.Gdjan, M.Mroczkowski.

DESCRIPTION. FEMALE. Measurements. Carapace 2.80 long, 2.10 wide, 1.28 high at PLE. Ocular area 1.31 long, 1.53 wide anteriorly and 1.65 wide posteriorly. Diameter of AME 0.43. Abdomen 2.88 long, 2.50 wide. Cheliceral length 0.68. Clypeal height 0.25. Length of leg segments: leg I - 1.48 + 0.93 + 0.81 + 0.45 + 0.50; leg II - 1.38 + 0.85 + 0.73 + 0.53 + 0.48; leg III - 1.63 + 0.80 + 0.80 + 0.80 + 0.60; leg IV - 2.58 + 1.25 + 1.38 + 0.95 + 0.58. Leg spination. Leg I: femur d.0-1-1; tibia v.0-2-2ap.; metatarsus v.2-2ap. Leg II: femur d.0-1-2ap.; patella pr. and rt.0-1-0; tibia pr.1-1, v.0-1-2ap.; metatarsus pr.1-1, v.2-2ap. Leg III: femur d.2ap.; patella pr. and rt.0-1-0; tibia pr. and rt.1-1, v.1ap.; metatarsus pr. and rt.1-2ap., v.1-1ap. Leg IV: femur d.1ap.; patella pr. and rt.0-1-0; tibia pr. and rt.1-1, v.1ap.; metatarsus pr.1-2ap., rt.1-1-2ap., v.1ap. Coloration. Carapace brown, eye field dark brown, both densely covered by yellow scales and

hairs. Clypeus brown, densely covered by long white hairs. Sternum yellow. Maxillae and labium brown with white apices. Chelicerae dark brown. Dorsum grey-yellow, densely covered by grey-yellow scales. Venter yellow. Spinnerets and book-lung covers yellow. All legs yellow with brown rings and patches; femora and tibiae covered by long white hairs. Epigyne and vulva as in Fig. 3.

MALE unknown.

DIAGNOSIS. The new species may be confused with *Yllenus kulczynskii* Punda, 1975 [s. Logunov, 1992b), but the position of the copulatory openings (Fig. 3a) and the structure of the insemination ducts (Fig. 3b) are the best diagnostic characters of this species.

DISTRIBUTION. Type locality only.

ETYMOLOGY. The species is named in honour of Dr. Yuri M. Marusik, my friend and colleague from Magadan.

Genus *Tuvaphantes* n.

Type species: *Dendryphantes insolitus* Logunov, 1991.

DEFINITION. Medium-sized spiders ranging from about 5 to 6 mm in length. **Carapace:** relatively high; pars cephalica equal in length to pars thoracica; eye field over 1.4-1.6 times wider than long; PME closer to ALE than to PLE; fovea present. **Clypeus:** small, subvertical, 3-3.2 times less than AME diameter. **Eyes:** in three rows; their size ratio $AME > ALE = PLE > PME$. **Labium:** oval. **Maxillae:** subtriangular with rounded tips. **Chelicerae:** small, vertical; promargins with two small teeth; retromar-

gin with one large tooth. Petiolus: small, usually invisible in dorsal view. Abdomen: oval, 1.3-1.5 times longer than wide. LEGS: subequal in length; leg formula, males I,IV,III,II, females IV,I,III,II; all segments except patellae and tarsi are spinated. Female palp: usual, without apical claws. Male palp: genital bulb subequal in width to remaining segments (Fig. 4); tegulum fused with cymbium; morphologically embolus not expressed; basal haematodocha absent; distal haematodocha present, occupying apico-ventral part of tegulum (Fig. 4a,d); cymbium without apical claws; cymbium with a strongly chitinized sclerite on latero-proximal side (arrowed in Fig. 4b,e). Female genitalia: epigyne like a pair of triangular plates, with copulatory openings closer to each other [s. Logunov, 1991, Fig. 4].

DIAGNOSIS AND AFFINITIES. The congeners of *Tuvaphantes* gen.n. can be separated from other salticids by the following unique (negative) characters: absence of normally developed seminal ducts in the genital bulb; absence of a morphologically expressed embolus [Fig. 4]; absence of a basal haematodocha; fused tegulum and cymbium; and very massive insemination ducts.

Affinities of this genus are difficult to outline, as all the above characters are absolutely unique in the family Salticidae. At the present, no genus can be named as a likely sister group for *Tuvaphantes* gen.n. If based solely on the general appearance, these spiders are similar to the genus *Dendryphantes* (subfamily Dendryphantinae), in which one of *Tuvaphantes* species was previously described [Logunov, 1991].

Taking into account that a sister taxon for the jumping spiders is still undefined and that their origin is not yet ascertained [Wanless, 1984], it is unclear whether the genitalic structure in *Tuvaphantes* gen.n. reflects a primitive or a derived condition. However, it seems reasonable to adhere to the hypothesis that the subfamilies Spartaeinae and Lyssomaninae are the most primitive salticids [Jackson & Blest, 1982; Jackson, 1986; Wanless, 1980, 1984]. Put this way, the structure of a male genital bulb with a great number of palpal sclerites should be regarded as primitive for Salticidae. If so, *Tuvaphantes* probably exhibits a derived and strongly specialized condition of palpal structure.

For the time being, the genus comprises two species: *Tuvaphantes insolitus* (Logunov, 1991), comb.n. ex *Dendryphantes*, and *Tuvaphantes arat* sp.n.

DISTRIBUTION. Tuva (East Tannu-Ola Mt. Range), but probably wider in Central Asia.

ETYMOLOGY. The generic name is derived from the country name, Tuva, where both species of

this genus have been collected.

Tuvaphantes arat sp.n.

Fig. 4a-c.

MATERIAL. Holotype # (ZMMU, Ta-4780), Tuva, 5-7 km SW of Erzin Village, Tes-Khem River Valley, swept from *Caragana* shrubs, 1000 m alt., 24.05.1990, leg. D.V. Logunov.

DESCRIPTION. MALE. Measurements. Carapace 2.50 long, 1.98 wide, 1.15 high at PLE. Ocular area 1.18 long, 1.43 wide anteriorly and 1.63 wide posteriorly. Diameter of AME 0.43. Abdomen 2.83 long, 1.95 wide. Cheliceral length 0.88. Clypeal height 0.15. Length of leg segments: leg I - 1.58 + 1.03 + 1.15 + 0.93 + 0.68; leg II - 1.25 + 0.78 + 0.70 + 0.70 + 0.55; leg III - 1.15 + 0.65 + 0.68 + 0.70 + 0.55; leg IV - 1.53 + 0.60 + 0.90 + 0.85 + 0.65. Leg spination. Leg I: femur d.0-1-3; tibia v.2-2-2; metatarsus v.2-2. Leg II: femur d.0-1-1-3; tibia pr.0-1, v.0-1-2ap.; metatarsus v.2-2. Leg III: femur d.1-1-3; tibia pr. and rt.0-1-0, v.2ap; metatarsus pr.1ap., d. and v.2ap. Leg IV: femur d.1-1-3; tibia v.1-0-2ap; metatarsus pr. and rt.1ap., v.2ap. Coloration. Carapace red-brown with brownish veins. Eye field black, shagreened, covered by small dark hairs. Clypeal edge with dense white hairs. Sternum brown with white hairs. Labium, maxillae and chelicerae reddish-brown. Abdomen reddish-grey with dorsal dark markings like in all *Dendryphantes* [e.g. Proszynski, 1979: Figs. 61-63]. Leg I brown-red with dark brown femur. Legs II-IV: femora brown, remaining segments yellowish with brown rings. Palp yellowish-red, its structure as in Fig. 4 a-c.

FEMALE unknown.

DIAGNOSIS. The new species is closely related to *Tuvaphantes insolitus* (Logunov, 1991), but can be distinguished by the larger chitinous sclerite on the distal haematodocha and shape of the tegulum (Fig. 4a-c).

DISTRIBUTION. Type locality only.

ETYMOLOGY. The species name is derived from «arat», the ancient name of Tuvan and Mongolian nomades.

Tuvaphantes insolitus (Logunov, 1991), comb.n. ex *Dendryphantes*

Fig. 4d-i.

MATERIAL. 1 ♂ (ZMMU, Ta-4781), Tuva, Ulug-Khemski Distr., 8 km S of Torgalyk Village, slope steppes, 1100-1200 m alt., 9.05.1990, leg. D.V. Logunov.

DESCRIPTION. MALE. Measurements. Carapace 2.45 long, 1.73 wide, 0.95 high at PLE. Ocular area 1.13 long, 1.28 wide anteriorly and 1.43 wide

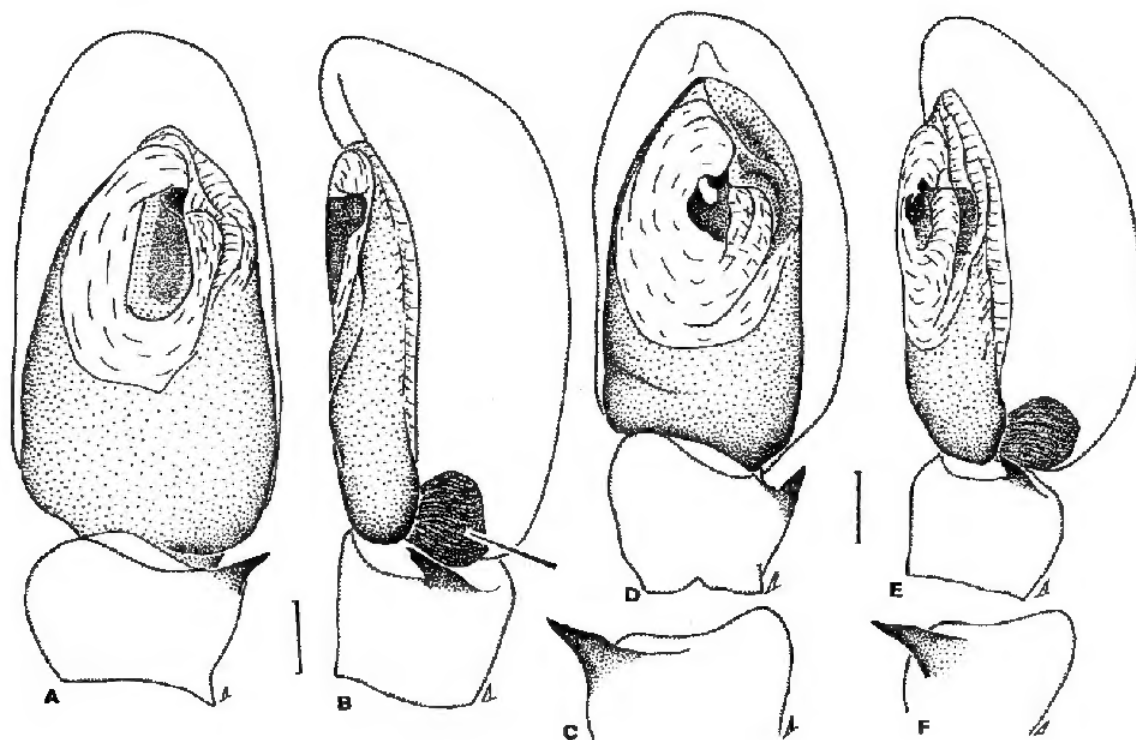


Fig. 4. Male palpi of *Tuvaphantes arat* sp.n. (a-c) and *T. insolitus* (Logunov, 1991) (d-f): a,d - ventral view; b,e - lateral view; c,f - tibial apophysis, caudal view. Scale 0.1 mm.

Рис. 4. Пальпы самцов *Tuvaphantes arat* sp.n. (a-c) и *T. insolitus* (Logunov, 1991) (d-f): a,d - вид снизу; b,e - вид сбоку; c,f - голенный отросток, вид сзади. Масштаб 0.1 мм.

posteriorly. Diameter of AME 0.40. Abdomen 2.30 long, 1.80 wide. Cheliceral length 0.73. Clypeal height 0.10. Length of leg segments: leg I - $1.35 + 0.75 + 0.90 + 0.80 + 0.53$; leg II - $1.03 + 0.60 + 0.60 + 0.63 + 0.40$; leg III - $1.05 + 0.58 + 0.58 + 0.63 + 0.48$; leg IV - $1.25 + 0.65 + 0.80 + 0.75 + 0.50$. Leg spination. Leg I: femur d.0-1-3; tibia v.2-2-2; metatarsus v.2-2. Leg II: femur d.0-1-1-3; tibia pr.0-1, v.1-2ap.; metatarsus v.2-2ap. Leg III: femur d.0-1-1-2; tibia rt.0-1, v.2ap.; metatarsus pr. and v.2ap., rt.1ap. Leg IV: femur d.1-1-1; tibia v.1-2ap.; metatarsus pr. and rt.1ap., v.1-2ap. or 2ap. Coloration as described for ♂ *Tuvaphantes arat* sp.n., except as follows: clypeus without coat of white hairs. Palp structure as in Fig. 4.

FEMALE. For its description see Logunov, [1991].

DIAGNOSIS. Compared to *Tuvaphantes arat* sp.n., this species has a narrower tegulum and a smaller sclerite on the distal haematodocha (Fig. 4d-f).

DISTRIBUTION. Tuva, East Tannu-Ola Mt. Range.

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